JCR

INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

COUNTRY Czechoslovakia

REPORT

SUBJECT Rudy Letov Airframe Plant in Letnany re: description; prod. data; processing; markings; product description,

DATE DISTR. 4 NOV 1957

NO. PAGES 30

REQUIREMENT NO. RD

REFERENCES

50X1-HUM

DATE OF INFO.

PLACE & DATE ACQ

SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE

report on the Rudy Letov Airframe Plant[1] located in Letnany, near Prague. The report contains a detailed layout and description of the plant area. Since 1954 the plant produced only the wings and stabilizers of MIG-15 aircraft and since 1955 also wings and stabilizers of IL-14 transport aircraft. In mid-May 1957 construction of four iron jigs for production of wings was started in the plant and it was rumored that these were to be for future assembly of MIG-19 wings. these jigs were to be used for this purpose, beginning late 1957.

50X1-HUM

50X1-HUM

50X1-HUM

two sketches, one of the Rudy Letov Airframe Plant and the other of the floor plan of the MIG-15 wing assembly halls at this plant. Legends to both of these are included in the report.

50X1-HUM

Comment: This plant is listed in the 1956 Prague telephone directory as the Letnanske Strojirny, n.p. Letnany (Letnany Engineering Works, National Enterprise, Letnany).

50X1-HUM

C

C-O-N-F-I-D-E-N-T-I-A-L

STATE	#X	ARMY	X	NAVY	X	AIR	#X	FBI		AEC					

(Note: Washington distribution indicated by "X"; Field distribution by "#".)

INFORMATION REPORT INFORMATION REPORT

C-O-NF-I-D-E-N-T-I-A-L

50X1-HUM

COUNTRY: Czechoslovakia

10 October 1957

SUBJECT: Rudy Letov Airframe Plant in Letnany

PAGES: 29

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

Rudy Letov Airframe Plant in Letnany

General Information

1. The Rudy Letov Airframe Plant located immediately southeast of Letnany (N 50-08, E 14-31) was engaged mainly in the production of wings for IL-14 and MIG-15 aircraft. The plant employed approximately 2100 people, of whom 30 percent were women. The plant had 10 air force officers assigned to it; they supervised production and quality of products. Major PETRZILKA (fnu) was in charge of overall production and assembly of IL-14 wings. All workers with previous military service were in the reserves. No Soviet personnel were seen in the plant. Most key positions in the plant were held by Communist Party members. However, the wing assembly hall for IL-14 wings employed 27 people; only six were Communists.

Production History

2. Production of wings for MIG-15 aircraft began at the Rudy Letov Airframe Plant in 1951. Until 1954 the plant produced complete MIG-15s except for engines. MIG-15 production was then decentralized; the Rudy Letov Plant made only wings and stabilizers while fuselages were produced in the "Aero" Vysocany Plant and at Prague/Vodochody. Engines were made at the Prague/Jinonice Plant. Final assembly of MIG-15s was performed at Prague/Vodochody. Production of IL-14 wings and stabilizers at the Rudy Letov Plant began in 1955; IL-14 engine manufacture and final assembly of IL-14 aircraft were performed at the "Avia" Plant in Cakovice.

50X1-HUM

Identification Data

3. Figure 1 on page 26 is an overlay [redacted] Figures in parentheses below refer to corresponding numbers on the overlay.

50X1-HUM

(1) Single Rail Line - Standard European gauge, leading from Prague north to Cakovice.

(2) Cakovice.

(3) Road - leading from Cakovice to Dablice (N 50-09, E 14-30).

(4) Annex of "Avia" Airframe Plant - engines for IL-14 aircraft were produced and tested in this section of the plant. Sources never entered this part of the plant.

(5) "Avia" Airframe Plant in Cakovice - final assembly of IL-14 aircraft was performed here.

(6) Asphalt Road - 12 meters wide, in good condition, leading from Prague north to Letnany. Trolley bus #58 ran on this road from Prague/Liben end station "U krize" north to Cakovice.

(7) Letnany - a town of approximately 2500 population.

(8) Asphalt Road - eight meters wide and in good condition. This road branched from Road, Point (2), and led east to Kbely.

(9) Rudy Letov Airframe Plant.

(10) Cobblestone Road - 10 meters wide. It branched from road, Point (6), and ran through the area of the Rudy Letov Airframe Plant.

(11) Prague/Letnany Aviation Research Institute (Letecky vyzkumny ustav) - no further information

(12) Letnany Airfield - grassy, well-kept air strip. 50X1-HUM

(13) Aircraft Repair Depot in Kbely - located approximately 200 meters from the road, Point (8). [redacted] This depot consisted of one brick, gable roofed hall measuring about 100 x 40 x 12 meters. 50X1-HUM [redacted] major inspections and overhauls of MIG-15 aircraft were performed here. No further information.

(14) Kbely (N 50-08, E 14-33).

(15) Cobblestone Road - six meters wide, in good condition, leading from Kbely east to Satalice (N 50-07, E 14-35).

(16) IL-14 Wing Storage - located in an area approximately 100 meters west of the first houses of Satalice, Point (17), and just a few meters from the road, Point (15).

(17) Satalice - a small town.

50X1-HUM

Site Layout

4. Inclosure 1 is a [redacted] sketch of the Rudy Letov Airframe Plant. Numbers in parentheses below refer to corresponding numbers on the sketch.

(1) Road - same as Point (6) of Figure 1.

(2) Concrete Wall - 2.2 meters high and 15 centimeters thick, topped with three strands of barbed wire. It surrounded the plant on the north, south and west sides.

(3) Entrance Building - referred to as "Brana", or "the gate". It was a brick, one-story building measuring 25 x 10 x 3 meters with a flat roof. On top of the roof was a red neon sign "Rudy Letov" with letters about 40 centimeters high. The building was built around a six- meter-wide passageway through which employees entered the plant. The south part of the building housed a reception room where a woman issued admission slips to visitors and to employees who forgot

their passes. Next to the reception room was a waiting room and the office of the plant's treasurer. North of the passageway was the cadre office with six employees, a savings bank for employees, and a guard room with one plant militia guard on duty during the day. The guard wore a dark grey uniform and was armed with a 7.62 mm pistol.

(4) Main Entrance for Vehicles - about 4.5 meters wide and blocked with a one-meter-high wooden barrier. After 1900 hours the entrance was closed with a three-meter-high, double winged metal gate. During the day this entrance was guarded by a plant militia guard from Point (3).

(5) Road - same as Point (10) of Figure 1.

(6) Cobblestone Road - five meters wide. It branched from road, Point (5) and led to building, Point (7). The road was about 120 meters long.

(7) Office Building - a two-story, brick construction measuring about 50 x 20 x 10 meters with a red tile, gable roof. The ground floor contained the following offices: office for military administration, with an air force major in charge of 10 officers who supervised production, efficiency and quality of products; pay roll office; office for hospital insurance, monetary allowance for families, and income tax; library, with technical and recreational literature; office with a roster of all employees who were in the reserves; and several other unidentified offices. The second floor contained designing offices, a photo laboratory and a specifications office.

(8) Barrack - a one-story, wooden construction measuring 20 x 10 x 3 meters with a tar paper, low-pitched gable roof. Employees who worked from 1400 until 2200 hours were allowed to stay here overnight if they so wished.

(9) School Building - a one-story, wooden construction measuring about 30 x 12 x 3 meters with a tar paper, low-pitched gable roof. This building contained about six classrooms where a two-year vocational trade school was conducted. Classes were held after working hours for four hours every Monday, Wednesday and Friday. The plant selected its own people to attend the school. Upon completion they received a vocational degree. Final examinations were conducted before a selected board of examiners. Teachers were subordinate to the Ministry of Education.

(10) Carpenter Shop - a one-story, wooden building measuring 30 x 15 x 6 meters with a tar paper, gable roof.

(11) Garage Port - open on all sides, measuring 20 x 5 x 2.2 meters with a tar paper, shed-type roof. It housed small, electric powered, scooter-type vehicles used to transport various material within the plant.

(12) Building - referred to as "hvezda", or "star". It was a brick construction measuring 150 x 50 x 25 meters. The west part of the building, about 30 meters long and 8 meters high, was divided into a one-story hall on the south containing an unknown number of grinding and cutting machines and lathes and a two-story section to the north. The ground floor housed a carpentry shop while the second floor was used to store clothing for loan to the employees. The middle section of the building, about 100 meters long, was two-story and had a glass cupola on the roof. On the ground floor was a shop with lathes, combination turret lathes and precision tools where profiles and prototypes of parts were made. The ground floor also had a shop for repairing electric tools and motors. The east part of the building, about 20 meters long, was one-story and divided into a section containing a forge and a welding shop and a hydraulic section where hydraulic systems were built into MIG-15 wings.

(13) Glass Cupola.

(14) Assembly Hall for MIG-15 Wings - see paragraph 17.

(15) Annex - under construction in June 1957. It measured approximately 15 x 12 x 6 meters and was made of concrete slabs. Purpose of the annex was unknown.

(16) Strength Test Building (Lamacka) - a brick construction measuring 60 x 35 x 15 meters with a glass, curved roof. It had a two-meter-thick, reinforced-concrete floor sunk three meters into the ground. In this building, completed IL-14 and TOM-208 (a two-seat military trainer) aircraft were tested for stress and/or load limits on all parts of the airframe. 50X1-HUM [redacted] the maximum load was 5000 kilograms. Sacks filled with sand or lead were attached to various parts of the airframe during testing. About every 50th aircraft of a production series underwent this strength test.

(17) Washrooms.

(18) Sheet Metal Storage - a wooden construction measuring 10 x 10 x 6 meters with a tar paper, round roof. Sheet metal for MIG-15 wing covering was stored here.

(19) Men's Locker Rooms - a one-story, wooden construction measuring 25 x 15 x 3 meters with a tar paper, gable roof.

(20) Upholstery Shop - a one-story, wooden construction measuring 6 x 4 x 3 meters with a tar paper, gable roof. De-icing systems in the leading edges of wings were covered with glass fiber (sklenena bavlna) here.

(21) Building - a one-story, brick construction measuring 40 x 20 x 7 meters, type of roof not recalled. Immediately below the roof was a 1.5-meter-high, glass wall section along both sides of the building. This building contained upholstery

shops and a repair shop for boring and grinding machines. Next to the building was an annex, measuring 5 x 3 x 2.5 meters, which contained an unknown office and a room for workers who loaded railroad cars with metal scrap.

(22) Railroad Spur - standard European gauge, branching from the main line in Cakovice and leading to the plant. This spur facilitated delivery of sheet metal from an unknown plant in Kladno (N 50-09, E 14-06).

(23) Main Entrance - 12 meters wide, not closed. Next to the entrance was a small guard post with one plant militia guard in uniform guarding the entrance at all times.

(24) Heaps of Coal - used in the boiler house, Point (40).

(25) Office Building - a one-story, brick construction measuring 20 x 4 x 3 meters with a tar paper, gable roof.

(26) Gate - five meters wide, seldom closed.

(27) Railroad Siding - an ESG line branching from the railroad spur, Point (22), and leading to Point (33).

(28) Storage - a one-story, wooden construction measuring about 20 x 20 x 6 meters with a tar paper, curved roof. In the north part of the building were offices. Various materials such as fire equipment, tar barrels, etc., were stored in the remainder. 50X1-HUM

(29) Building - a one-story, brick construction measuring about 30 x 25 x 4 meters with a gable roof covered with asbestos slabs. It was built in 1953 and 1954. Duralumin metal sheets were treated here to resist corrosion. [redacted] entrance was forbidden. 50X1-HUM

(30) Wooden Shed - measuring 4 x 6 x 3 meters, purpose unknown.

(31) Wooden Shed - measuring 5 x 4 x 3 meters, purpose unknown.

(32) Spray Shop - a one-story, brick construction built in 1956 and 1957. It measured 30 x 25 x 5 meters and had a glass saw-tooth roof. Ribs, spars and other parts of IL-14s were sprayed here. Six to eight people worked in this shop.

(33) Sheet Forming Shop - the east part of the building was wooden, placed on a concrete foundation and measured 40 x 25 x 7 meters. The west part was made of brick and measured 40 x 10 x 4 meters. This building contained approximately 20 press machines. Leading edges of MIG-15 wings were manually hammered out. Below the building on the north side were garages and a room in which pressurized air tanks for IL-14s were tested.

(34) Garage - a brick construction measuring 15 x 6 x 4 meters with an asbestos slab roof. Four Praga-RN trucks, three

Skoda-12s, one Tatra-8 passenger car, and four or five Aero-Minor passenger cars were parked here.

(35) Building - a one-story, brick construction measuring about 50 x 10 x 3.5 meters with a tar paper, low-pitched gable roof. This building contained several offices and storages with unknown material.

(36) Paint Shop - a one-story, brick construction measuring 25 x 8 x 4 meters, type of roof not recalled. It was built in 1955 or 1956.

(37) Fire Station - a two-story, wooden construction measuring 15 x 8 x 7 meters; type of roof not recalled. The ground floor garaged two fire trucks and two foam extinguishers. The second floor contained offices.

(38) Tower - eight meters high, containing pipes in which water or some other liquid was cooled.

50X1-HUM

(39) Washrooms.

(40) Boiler House - a brick construction measuring 30 x 25 x 5 meters, type of roof not recalled. On top of the roof was a ten-meter-high tower.

(41) Building - a one-story, brick construction measuring about 100 x 20 x 4 meters with a tar paper, low-pitched gable roof. This building contained a tinsmith section and a welding shop. There was also a section where fuel and auxiliary fuel tanks for MIG-15s and fuel tanks for IL-14s were made. Approximately 50 people worked on the tanks. The inside of the building was divided by a wooden partition. On the west part of the partition pedals and control wheels for MIG-15 aircraft were made. There were also small electric shops, locker rooms and a storage for material needed for production for fuel tanks.

(42) Two Canteens - wooden constructions, each measuring about 3 x 2 x 3 meters.

(43) Kitchen and Messhall - a one-story, "V"-shaped, brick and wood construction measuring 40 x 40 x 5 meters. All personnel were messed here.

(44) Water Works - a brick construction measuring about 8 x 6 x 5 meters, located among trees. There was a shortage of water in the plant because of poor pressure.

(45) Statue - built in memory of those who died in 1945 in Letnany.

(46) First-Aid Station - a two-story, brick construction measuring 35 x 15 x 10 meters with a low-pitched, gable roof covered with asbestos slabs. Built in 1956 and 1957, the building was

painted light green. Two doctors, two dentists, and six female nurses and one male nurse were on duty during the day. The second floor of the building housed an X-ray room and dental offices.

(47) Concrete Area - located in front of the first-aid station, Point (46). It was 10 meters wide.

(48) Administration Building - a two-story, brick construction measuring approximately 35 x 20 x 13 meters with a tile, gable roof. The ground floor housed offices of the Revolutionary Trade Union Movement (ROH) [redacted] The second floor housed offices of the plant director, the chief engineer and the political affairs officer. 50X1-HUM

(49) Women's Locker Rooms - a one-story, wooden construction measuring 25 x 8 x 3 meters with a tar paper, gable roof.

(50) Water Reservoir - 20 meters long, six meters wide, depth unknown. It had concrete walls and was fenced with a one-meter high red, metal fence.

50X1-HUM

(51) Machine Shop - called "hall #9", a one-story construction with a 1.5-meter-high brick foundation; walls were of glass. The building measured 40 x 30 x 8 meters and had a corrugated, sheet-iron, curved roof [redacted] It contained about 30 milling machines and lathes.

50X1-HUM

(52) Machine Shop - called "hall #10", it had the same construction and dimensions as Point (51). [redacted]

(53) Wooden Building - measuring 15 x 8 x 3 meters with a tar paper, gable roof. It contained Svazarm and accident prevention offices.

(54) Assembly Hall #12 - a brick construction measuring about 60 x 40 x 15 meters with a tar paper, curved roof, with skylights, and concrete flooring. Horizontal stabilizers and elevators for IL-14 and MIG-15 aircraft were assembled here. Approximately 60 people worked here.

(55) Assembly Halls #13 and #14 - wooden construction. Each hall measured about 60 x 40 x 15 meters. For details, see paragraph 5.

(56) Locker Rooms - a one-story wooden construction measuring about 35 x 16 x 3 meters with a tar paper, gable roof. On the west part of the building was a wooden annex measuring 5 x 4 x 3 meters where fuel tanks were given vibration and pressure tests.

(57) Sheet Metal Storage - a new, brick construction measuring 70 x 45 x 15 meters, type of roof not recalled. All types of sheet metal were stored here and cut to desired dimensions and shapes. Quantity of sheet metal was unknown.

(58) Guard Post - a one-story, brick construction measuring 6 x 4 x 3 meters, type of roof unknown. Two uniformed, plant militia guards were on duty at all times. 50X1-HUM

(59) Scrap Storage - in the open. Duralumin and steel scrap from Points (51) and (52) were stored here and from time to time delivered to Point (61) where it was loaded onto railroad cars.

(60) Paint Shop - a one-story, brick construction measuring 12 x 4 x 4 meters, type of roof not recalled. About five people sprayed all types of piping for MIG-15 and IL-14 aircraft with an oil lacquer.

(61) Scrap Storage - in the open. From time to time scrap was loaded onto railroad cars at Point (22) for transfer to an unknown destination. 50X1-HUM

5. Figure 2 on page 27 is a sketch of the floor plan of the IL-14 wing assembly hall, Point (55) of Inclosure 1. Numbers in parentheses below refer to corresponding numbers on the sketch.

(1) Wooden Annex - containing two rooms. One room served as a dining room for workers who brought their own food. 50X1-HUM

(2) Offices - four to five in number; used by section chiefs, supervisors and bookkeepers. 50X1-HUM

(3) Five or Six Work Benches - each about 12 meters long and 1 meter wide. Benches were of iron and wood. Approximately 10 people worked on the production of wing beams for IL-14 aircraft. beams were single-piece extrusions.

(4) Work Benches - where skeletons for leading edges were made.

(5) Work Benches - where wing tips were made.

(6) Production of Skeletons for Ailerons.

(7) Production of Trailing Edges and Assembling of Ailerons.

(8) Riveting of Longerons - to the final skin between leading and trailing edges.

(9) Boring Machine - for boring longerons.

(10) Repair Section - for electric tools.

(11) Material and Tool Issue Point - boring machines, pneumatic hammers, winding machines and other tools were kept here and issued to employees. There were a sufficient number of tools in stock except for 220 volt electric shears and angular drilling machines.

(12) Office of the Military Representatives - Major PETRZILKA (fnu) and his assistant, also a major, were assigned here.

(13) Office for Working Norms.

(14) Office of the Chief of Production of IL-14 Wings - Vycital (fnu).

(15) Office for two engineers.

(16) Office - for issuing material, with one man in charge.

(17) Test Section - where elasticity of longerons and other parts were tested by means of a chamber press (komorovy lis).

(18) Production of Wing Ribs.

(19) Section Chief Office - Josef Smola. The entire assembly hall was divided into four main sections (cechy).

(20) Three Work Frames - steel constructions imbedded in concrete. Each frame was about 11 meters long and 3 or 4 meters high. One-half of each frame was for the right, the other half for the left wing. On these frames, wings were assembled from complete leading and trailing edges, main beam, ribs and the upper part of the final skin with longerons. Eight persons worked on each frame.

(21) Grinding Machine.

(22) Frames - where leading edges were covered with sheet metal.

(23) Section - where filler caps were riveted into fuel tanks.

(24) Grinding Machine.

(25) Work Frames - steel constructions imbedded in concrete. Wings were milled to the exact length. Also longerons were bored from a round into a "U" shape. Between the two frames was a milling machine [redacted] movable on tracks which were imbedded in concrete. This machine was inspected every 14 days. 50X1-HUM

(26) Work Frames - one for the right, the other for the left wing. Ailerons and wing tips were attached here.

(27) Work Frames - for the production of filler caps.

(28) Work Frames - where fuel tanks were added to the wings and openings were covered with caps. Wings remained in these frames for final inspection.

(29) Work Bench - with a drilling machine and a clamp.

(30) Upholstery Section - where ailerons were covered with fabric and de-icers with glass cotton.

(31) Storage Section - for fuel tanks, ailerons and duralumin sheets for production of filler caps. This section was fenced by two-meter-high chicken wire.

(32) Grinding and Milling Machines.

(33) Offices.

(34) Power Switchboard - with electric switches for the entire hall plus a transformer changing voltage from 220 to 24. Within the hall were 12 poles containing switches and plugs for overhead lights. Two emergency lights would automatically switch on if the main electric power failed. The four permanent boring machines and the milling machine, Point (25) used 380 volts. Hand boring machines, about 500 in number, required 220, 42 and 24 volts. The hall contained approximately 300 pneumatic hammers.

(35) Storage - for screws and other miscellaneous items.

(36) Storage - for unknown material.

(37) Brick Annex - containing a repair shop for electrical appliances.

(38) Ladies' Washrooms.

(39) Gentlemen's Washrooms.

(40) Work Bench - with two clamps.

50X1-HUM

[redacted] 50X1-HUM

Production of IL-14 Wings

7. Following in chronological order is a discussion of IL-14 wing production at the Rudy Letov Plant.

a. 1955 - IL-14 wing production began at Rudy Letov.

b. [redacted] 50X1-HUM

c. January 1957 - first IL-14 sold to the Soviet Union. [redacted]

d. June 1957 - three modified IL-14s were sold to the Czechoslovak civilian airlines and the modification will be called AVIA-14.

e. January to March 1957 - 25 IL-14s had to have fuel tanks in wings replaced because of faulty welding.

f. [redacted] 50X1-HUM

g. June 1957 - strength tests were to be made on a complete aircraft with wings [redacted] it was the 05-111. 50X1-HUM

8. [redacted]

June 1957. [redacted] only 45 had been manufactured and that in future, from the 61st wing pair on, all wings would be

 50X1-HUM

of the new, stronger design. [redacted] the discrepancy between the cumulative production figure as indicated by the [redacted] the supervisor's statement. [redacted] production of wing pairs to be 10 per month, on an average, and 15 per month maximum. [redacted] the Soviet Union would buy any number of IL-14s. The quota for June 1957 was to be 16 pair of wings. [redacted] this quota was fulfilled because 15 pair of wings, without fuel tanks, lay idle in the wing assembly hall [redacted] wing fuel tanks were in short supply. Eight pair of these 15 were fitted with fuel tanks and eight additional new wings were made. [redacted] if the Rudy Letov Plant was to produce 16 pair of IL-14 wings regularly per month, the final wing assembly hall would be required to work in two shifts, especially on the work frames where final assembly of wings took place. Normally a wing required 10 days in the work frame before it was completely assembled.

50X1-HUM

50X1-HUM

50X1-HUM

IL-14 Model Change

9. Several IL-14s were built with 24 seats instead of the usual 18. These planes had a fuselage one meter longer than normal. Half a meter was added to the nose and half a meter inserted between the cockpit and main fuselage section. In order to carry the extra load, the wings of these modified planes were strengthened. This was done in part by lengthening the longerons to the tips of the wings.

Strength Test of IL-14s

10. [redacted] every 50th IL-14 aircraft was supposed to be subjected to a strength test. [redacted] the first IL-14 aircraft underwent a load test in October 1956, at Point (16) of Inclosure 1. [redacted] the aircraft immediately after the test in a building, Point (17) of Inclosure 1. The result of the test was that the longerons broke first and then the main beam at the point where the vertical fin began.

50X1-HUM

11. [redacted] these were the wings which would be attached to the fuselage of the IL-14 aircraft scheduled to undergo a strength test in June 1957. One of the wings was completed [redacted] the wing fuel system and the fuel tanks when inserted into the wing had all bolts secured by means of a wire; [redacted] The bolts on the fuel system and the tanks were not secured with wire during the strength test and the tanks were in the wing merely to give the necessary weight. Strength load tests were performed on completely assembled aircraft. Fuselages were brought from the "Avia" Plant; mechanics from the Rudy Letov Plant then attached the wings. [redacted] no separate strength test was made of the newly designed stronger wings.

50X1-HUM

50X1-HUM

50X1-HUM

Replacement and Faulty Welding of Fuel Tanks

12. During January, February and March of 1957, wing fuel tanks had to be replaced in 25 IL-14s because of faulty welding. Subsequently, the welding method was improved. [redacted] replacement 50X1-HUM was ordered for all previously welded tanks because the welding process had been the same until it proved faulty. Only the Rudy Letov wing mechanics were engaged in the replacement of the faulty fuel tanks. Four mechanics worked simultaneously on one wing and it required approximately 30 hours to replace the tanks in one 50X1-HUM wing. Four mechanics from the Rudy Letov Plant worked on replacement of tanks on four IL-14s at Kbely Airfield [redacted] two wings had their tanks replaced directly at the Rudy Letov Plant; and four mechanics went regularly to the "Avia" Plant in Cakovice to replace tanks. [redacted] 50X1-HUM [redacted] a manual welding technique in which a bright blue gas flame and a separate rod of filler- 50X1-HUM metal were used. [redacted] wing tip tanks for MIG-15s were welded in this manner when joining two halves of a tank, but that electrical spot welding was used to first built up interior strengthening ribs.

Raw Material

13. [redacted] the Rudy Letov Plant. 50X1-HUM Shipments came to the plant by rail; few trucks from outside the plant were ever seen. [redacted] 50X1-HUM [redacted] The quality of the latter was poor and when the Soviets took delivery of the IL-14 they supplied their own exhaust pipes. The only other supplier [redacted] was a rubber plant at Nachod which manufactured protective caps used to cover piping in the wings during production.

50X1-HUM

"Avia" Plant at Cakovice

14. Wings and elevators were sent to the "Avia" Plant at Cakovice for assembly onto the aircraft. Quarrels sometimes occurred between managers of the Rudy Letov and "Avia" Plants. There was confusion in "Avia" production scheduling. At one time "Avia" could not sell the aircraft and was unable to meet the workers' pay roll. Another time "Avia" refused to accept two pair of wings and for lack of space these were stored at an open storage area, Point (16) of Figure 1.

Shifts and Wages

50X1-HUM

15. The normal work shift at the plant was from 0600 to 1430 hours; 46 hours in a six-day week. Only two sections, the machine shops and the sheet forming shops, worked double shifts. [redacted] [redacted] when IL-14 wing production was started in 1955 the crowded conditions in the sheet forming shops necessitated a double shift there. [redacted] 50X1-HUM [redacted] The average salary was 1200 crowns per month;

the minimum was 900 crowns. Working conditions were rather bad, especially in winter because of lack of heat. Morale among employees was low. Working norms were being constantly increased while salaries remained the same.

MIG-15 Wing Assembly Halls

16. The MIG-15 wing assembly building measured 100 x 150 x 12 meters and was divided by a brick wall into Halls # 1 and #2. The brick hangar-type building had concrete floors and a curved roof with skylights. An apron 40 meters wide was located in front. The folding iron doors across one end of the building were closed most of the time. The halls were lighted by neon lights and large electric light bulbs hanging from the roof. There were dozens of plugs for portable lamps installed along the walls and at the work stands. For heating purposes four air blowers were installed -- three in Hall #2 and one in Hall #1. During hot days several windows in the roof were opened as well as the four large windows in Hall #1. No guards were posted in the halls because the workers were warned that they would pay a fine of 500 crowns if caught in a hall other than the one in which they worked.

17. Inclosure 2 is a [redacted] sketch floor plan of the MIG-15 wing assembly building Point (14) of Inclosure 1. The figures in parentheses below refer to the figures on the sketch. 50X1-HUM

(1) Doors - made of sheet metal and leading to the assembly halls.

(2) Overhead Traveling Crane - with a capacity of 5000 tons; the hooks hung on cables and were movable along the crane. The crane operator moved along with the crane; there were no automatic handling mechanisms.

(3) Foreman's Office - with desks for the designing clerk (planovac) and a female secretary.

(4) Large Windows - along the wall of Hall #1.

(5) Stockroom - containing all tools needed in both halls. These tools were in poor condition.

(6) Four Wing Jigs - under construction. They were to be used for MIG-19 wing production.

(7) Wing Jigs - for left wings.

(8) Workstands - for basic work on wings. Consisting of steel frames fastened in the floor, they were two meters high and of various lengths. Logerons and spars were fitted into an aluminum cover and the main and front beams (hlavni a predni nosniky) were partially rivetted here.

(9) Wooden Wall - three meters high, it separated the final inspection section from the sprayer's section.

(10) Wing Stands - wooden construction, for completed and wrapped wings.

(11) Final Inspection Point - wings were placed on large wooden tables.

(12) Warm Air Heater and Blower.

(13) Painter's Workstand - with spraying equipment.

(14) Office of the Military Representatives (ZVS- zastupce vojenske spravy).

(15) Workstands - for right wings.

(16) Loading Area - for the wings. They were put on flat, four wheeled carts.

(17) Three Wall Openings - between Hall #1 and Hall #2.

(18) Workstands - for mechanics working on wheel fairing covers, produced at Point (23). They were completed here and fitted into the landing gears. The tools on this workstand included four large clamps, a large vertical drill and two grinders. This drill and all others used in the hall bore the trademark "TOS" (Tovarna obrabecish stroju), referring to the tool machinery plant where they were manufactured.

(19) Inspector's Office.

(20) Workstand - with a large vertical drill.

(21) Workstands - for manufacturing ailerons. Two steel frames were used for the aileron skeletons which were drawn from the stockroom, Point (48).

(22) Workstand - with two large clamps; used for ailerons.

(23) Workstands - for manufacturing wheel fairings. One steel frame was fastened into the floor. The two workstands were used for riveting work; three large clamps were in use.

(24) Six Holders - for the ailerons completed at Point (21).

(25) Stockroom - for small parts and tools.

(26) Large Metal Workstand - measuring 10 x 2 meters.

(27) Six Frames - for manufacturing flaps.

(28) Office - used by the foreman of Department # 454.

(29) Stockroom - for small items such as screws, nails, rivets, bolts, etc., used for manufacturing flaps.

(30) Table - for unspecified work.

(31) Wooden Workstand - for dynamic balancing of ailerons; waterproof fabric was used to cover part of the ailerons.

(32) Assembly Point - for wing tips, landing gears, flaps and ailerons. Six desks were used for tools needed for this work.

(33) High Metal Workstand - measuring 2 x 2 x 10 meters; it was called the beater (klepacka) because dust and shavings were removed here through cleaning with pressurized air and hard hitting hoses.

(34) Assembly Point - for minor additional work.

(35) Three Teststands - fastened into the floor. Large iron stands; they were used for testing the operation of the completed wing.

(36) Table - with shelves for three bottles of pressurized air used to fill tires at Point (39).

(37) Workstand - for mechanics working on the mechanically operated landing gear and flaps indicator.

(38) Wooden Shelves - for standard tires for the MIG-15. They bore the trademark "Barum'Aero". Pressure for the mounted tire was seven atmospheres.

(39) Tire Mounting Stand.

(40) Wing Jig - under construction, to be used for MIG-19 wings. This iron frame had the shape of MIG-15 wings.

(41) Closets - containing acetone in drums to be used for removing paint from the wheels.

(42) Workstand - with one large clamp.

(43) Workstand - with two large clamps and lockers on the wall for workers.

(44) Inspector's Desk.

(45) Workstand - with two large clamps and lockers on the wall for workers.

(46) Water Hydrant - with hose.

(47) Washroom.

(48) Stockroom - consisting of two sections where three clerks worked.

(49) Main Switchboard - with two generators producting 380 volts; used by vertical drills and grinders. Normal voltage was 220.

(50) Office of the Foreman of Department #455 - containing a desk for his female secretary. The workers punched their time cards in front of this office.

(51) Electrician's Shop - used for minor electrical repair work.

(52) Snack Bar - all food had to be ordered in the morning to be ready for pick-up and sale in the afternoon.

MIG-15 Wing Production Flow

18. For more efficient control of workers and production, the halls were split into departments. Hall #2 consisted of Departments #454 and #455. Inclosure 2 is a [redacted] sketch of the two halls; arrows indicate the flow of production. (See paragraph 17 for the legend to this inclosure). Curved metal sheets were carried from a stockroom and placed on the two-meter-high jig (pripravek) Point (8), where the front beam (predni nosnik) and the main beam (hlavni nosnik) were fitted and partially riveted. Both were made from steel and duraluminium material; the front beam had an "I" shape and measured about five meters in length. The main beam had a square shape (skrinovy), consisting of two "U"-shaped halves, measuring 1½ meters in length. Several spars were also riveted. The wings were separated into right and left wings and carried to the next jig. Two rows of six jigs for the left wings were located at Point (7); jigs for the right wings were at Point (6). At both places additional spars were riveted. From here the wings were placed on low four-wheeled carts and hand driven through the wall opening into Hall #2 to the workstand, Point (26). Here the wings were fastened to the large metal workstand through the two lugs on the main beam and one lug on the front beam. In this position, the wings could be turned freely. Various minor jobs were done here, such as fitting the cover for the remote compass which was placed into the wing at the Vodochody Plant and the fitting of the cover for the control of the flap locks and valves. Mounts for the flaps and ailerons were completed and additional riveting was done. The wings were again placed on four-wheeled carts and moved to the assembly point, Point (32), where wing tips, ailerons, flaps, landing gear doors, wheel fairings and struts were attached. The six workstands were used for the tools needed during the attaching work. Aerodynamic balance was achieved here. From this point, the wings were moved to Point (33) where they were attached to the beater. Up to this point, no cleaning had been performed. The wing was fastened on the high beater so that it could be moved in any direction. The cleaned wing was put on a four-wheeled cart and moved back to Hall #1, Point (13). Here the wing was turned upside down and the entire space for the landing gear was coated with gray anti-corrosive paint. The overhead crane picked up the wing, turned it and put it on a three-wheeled cart which was pushed back to Hall #2.

50X1-HUM

19. The wing assembly work then reached Department #455 for final assembly (konecna montaz). At Point (34) the wings were sorted into

right and left types, but were left on carts. Hydraulic, electric, pneumatic and mechanical actuating systems were installed here. Anti-corrosive paint was applied to those parts on the landing 50X1-HUM gear system which were not covered at Point (13). Point (34) carried out the following sequence of operations. 50X1-HUM

a. drilled two holes into the wing spar. Using an electrically driven hand angle drill, made two holes to a 50X1-HUM depth of 2½ milimeters. Into these holes attached the "Bronze Valve" (bronzovy ventil) # 634700; all valves of 50X1-HUM this type had the same number. This pressure regulating valve was 12 centimeters long and had a diameter of 3 centimeters; it weighed 30 dekagrams. drew this valve together 50X1-HUM with the material for the hydraulic system and the pneumatic system from the stockroom. Its purpose was to provide a pressure of 150 atmospheres to the wheel door actuator. If the main landing gear strut was retracted, a lug hit the valve release and the fluid poured into the cylinder of the wheel door actuator. The working time required for this operation was 15 minutes.

b. then pushed the piping for the brake pneumatic system 50X1-HUM through the openings in the spars; there were two pipings for the MIG-15 wings, but three pipings for the CS-102 (UT-MIG-15) because in this two seat aircraft both pilots could apply the brakes. Working time was five minutes.

c. mounted the hydraulic pipe system. The pipes had 50X1-HUM an outside diameter of eight milimeters and an inside diameter of five milimeters; they were steel for the CS-102 and duraluminum for the MIG-15, because of the shortage of steel. This piping was placed in a mount; often the piping had to be fitted to this mount. The working time for this job was one and a half hours.

50X1-HUM

d. attached a check valve to the spider (pavouk) piping. it was of the type AMG-10, made from brass, 10 centimeters long 50X1-HUM with a diameter of two centimeters. It consisted of a ball seal and a spring, allowing fluid to move only in one direction. Working time was 15 minutes.

50X1-HUM

e. Pneumatic brake pipings were installed. As the pipes were straight, had to bend and fit them into the openings. There were three pipes; two with an outside diameter of six milimeters and an inside diameter of four milimeters and one with an outside diameter of eight milimeters and an inside diameter of five milimeters. Working time was half an hour.

50X1-HUM

f. worked near the trailing edge where the hydraulic system for the flaps was located. mounted two brass valves; one a "five road" (peticestny ventil) valve, 14 centimeters long and two centimeters in radius, the other a "T"shaped valve (T-ventil), 12 centimeters long and 2 centimeters in radius. These two valves actuated the flaps to a 20 degree

50X1-HUM

or 55 degree angle. The working time for this mounting was 20 minutes.

g. [redacted] connected the hydraulic system of the flaps with the mounts and valves. This work required one hour. 50X1-HUM

h. [redacted] mounted a brass check valve, seven centimeters long and three centimeters in diameter, which was connected with the hydraulic system for the flaps. Working time required was 20 minutes. 50X1-HUM

i. [redacted] completed [redacted] assigned work in four hours and 15 minutes. 50X1-HUM

The wings were now moved to the testing stands, Point (35), where they were fastened to a fuselage-shaped wall with all hydraulic, pneumatic, electrical and mechanical lines connected to a simulated fuselage. In front of this testing stand was an electric motor of 380 volts fastened to the floor. It was connected with a compressor. The hydraulic fluid container was painted brown; the servo-fluid container was painted green. Part of the instrument panel of a MIG-15 was attached to a frame above the motor; the following handles were on the panel: flap operating lever, landing gear operating lever, pressure gauge (hydraulic), pressure gauge (servo unit), control lights, switches for bomb release and for landing lights, main switch for the electric motor, and control lights for the landing gears (red light if closed, green lights if open). On top of the entire stand, at a heighth of two meters, was a control stick simulating that of a MIG-15. Two representatives of the Military Administration (ZVS) tested the entire wing operation, using the panel and having all instruments in an "on" position. This test lasted more than 30 minutes. Production controllers were informed of any faults and these faults were repaired immediately. After the military representatives had approved the wing, they signed the final worksheet and the wing was moved to Hall #1.

The control of the wings at Point (11) was needed because the inspection at Point (35) consisted only of the wing operations. Here, the shop inspectors checked with flashlights and mirrors all screws, particularly the washers which broke frequently if tightened for the first time. They also checked the surface of the wings for any scratches.

[redacted] If faults and damage were beyond this limit, the inspector marked the faults on the inspection sheet. This list included 40 minor faults. The inspector knew the work of each employee and wrote the particular name on the worker's name on the sheet so that the repair would be done by that man. The repair of these faults never slowed down production because they took only about one hour, and this time was allowed in the production plan. The inspector checked the repairs, marked them down on the inspection sheet and placed it into the folder. 50X1-HUM

22. At Point (11) painters marked with various colors the entire wing operating system. Full lines were yellow, hydraulic lines were gray, oil lines were brown, pneumatic lines were red and servofluid lines were green. The military representatives were not present at these operations. The wings were dusted off and cleaned; they were wrapped in normal wrapping paper with starch used for fastening. An overhead crane picked up the wing from the cart and dropped it into the wing holder, Point (10). From here wings were either shipped directly to the Vodochody Plant or stored outside the halls.

Personnel

23. In Hall #2 one shift worked Monday to Friday from 0630 to 1430 hours and on Saturday from 0630 to 1230 hours. There was no work on Sundays. In 1956 overtime work was performed occasionally; in 1957 it was strictly forbidden by order of the management. The total number of employees in Department #455 of Hall #2 was 75, of which 30 were skilled workers. There were 23 female workers and one female secretary. The average age of the workers was 28 years. Only three were members of the Communist Party. All were members of the Czechoslovak Trade Union (ROH). The average salary was 1100 crowns; the department foreman received 2100 crowns. 50X1-HUM
[redacted] For the purpose of political indoctrination, the workers had to attend bi-weekly meetings called "destiminutovka" which lasted about ten minutes. The speaker was a Trade Union delegate. Because of the political feelings of the vast majority of the workers political discussions were avoided and only matters dealing with the plant and work were discussed. 50X1-HUM

24. The employees in Department #455 were:

a. The foreman and his secretary

b. Four controllers

c. Five clerks

d. Eight mechanics for the pipe lines (trubikari)

e. Five mechanics for the landing gear wheel unit (podvoskari)

f. Seven mechanics and electricians for the flaps (klapkari)

g. Four mechanics for the landing gear struts

h. Four movers to carry the wings from Hall #1 to Hall #2; they also assisted on the wing stands.

i. Two mechanics for the gyro units.

j. Two mechanics for the mechanical control system for the landing gear and ailerons.

k. Two mechanics for the bomb racks.

l. Two mechanics for the landing gear doors

m. One electrician

n. Three painters

o. One handy man

p. Two female mechanics for the landing gear emergency lines

q. Two female mechanics for the checking of all screws, nuts and valves.

r. Two female electricians for checking plugs and electrical lines.

s. Two female mechanics for the hydraulic system (hadickarky)

t. Four women cleaners who removed all dirt from the wings prior to final inspection.

u. Eleven girls, 16 and 17 years of age, who attended trade school three days a week and worked as apprentices in the hall the other three days.

25. The manager of Halls #1 and #2 was Hybs (fnu). The foreman of Department 455 was Zdenek Tesarek. The foreman of Department 454 was Papez, who was in charge of about 90 workers. Jan Zavora and Vladimir Circhovsky were inspectors in Department 455. The Trade Union delegate in the plant was Satoplet (fnu). The Communist Party secretary was Zelenka (fnu). Captain Frantisek SOJKA and an unknown first lieutenant of the Czechoslovakian Air Force were the two military inspectors of the Military Administration. 50X1-HUM

26. [redacted] Several of the workers who performed various desk jobs prior to their employment in the plant had great difficulty adjusting to the new job.

MIG-15 Wing Production Figures

27. The production figures for MIG-15 wing sets were continuously dropping during 1956 and up to June 1957. The average monthly production for 1956 was 108 to 120 wing pair per month; about one-half was for S-103 (MIG-15) and the other half for CS-102 (UT-MIG-15) aircraft. In March 1957 only eight wing sets for S-103 aircraft were produced; in April 1957 the monthly production was 58 wing sets, all for CS-102 aircraft. In May 1957 the total production was 57, again only for CS-102 aircraft. The production for June 1957 called for 52 wing sets which were completed [redacted]

50X1-HUM

28. At the end of 1956 a number of workers from Hall #1 and Hall #2 were shifted to other departments. In May 1957 ten workers from Department #455 were sent to other departments.

29. The production of wing sets exceeded the production of fuselages; therefore, wing sets were stored outside the assembly building [redacted]. The foreman of Department #455 confirmed, during the course of meetings, that fuselage production was less than the wing assembly. 50X1-HUM

30. All wing sets were moved by truck from the Rudy Letov Plant through the main gate located apposite the trolley bus station "Rudy Letov". [redacted] observation from this bus stop could determine the number of wings shipped from the plant because two wings (one wing set) were loaded on one truck. 50X1-HUM

31. The following incident in connection with production faults occurred in early June 1957: In the course of a final inspection of a MIG-15 wing, a faulty bearing of the landing gear actuator valve was discovered. The landing gear was removed and shipped to the factory of origin. This factory found that the material of this bearing was faulty and that this type bearing was used in four other landing gears. This announcement reached the Rudy Letov Plant about ten days after the faults were first discovered. In the meantime two faulty landing gears were discovered during final inspection, the other two were found in the stockroom of the Rudy Letov Plant. Though this incident was not held to be sabotage, it was sharply critisized because it demonstrated that important positions were held not by experienced workers but by hard-core Party members.

32. Lack of material and a poor supply system caused a slowdown in production during the first week of every month. Because scheduled work could not be performed, the workers were used for odd jobs such as cleaning floors, workstands, and tools. The foreman encouraged the workers to take their leave during such periods. In order to reach the scheduled output, the workers had to work much faster during the latter weeks of the month. This work was called "stormy work"(sturmovstina) because payment for piece work required the completion of the scheduled work or a cut in pay.

33. During the entire period [redacted] there was only one serious accident. A crane operator fell from his stand and had to be hospitalized for ten weeks. 50X1-HUM

34. [redacted]

50X1-HUM

35.

MIG-15 Stockroom Issue Forms - Work Sheets and Inspection Lists

36. The stockroom clerk had a folder listing all parts which he issued. For each part there was a sheet where the stockroom clerk marked down the date of issue and the name of the worker. The stockroom clerk kept one list for the monthly issuing of small items such as nails, screws, washers, etc.

37. A folder was attached to the wing frame as it reached Hall #1. Each department added its work sheet (pruvodni list) to the folder. The work sheet of Department #455 was signed and turned in after the department foreman made the following entries: number of the wing set, type of work performed, signature of the workers, signature of the inspectors and signature of the foreman. The last work sheet was added to the folder at the final inspection point. This sheet contained all points which were checked by the military representatives. The folder was handcarried to the Vodochody Aircraft Plant after the inspector at the wrapping point added his inspection list (nalezovy list). This list contained all defects discovered by the inspector and the notations of inspected repairs.

50X1-HUM

Production of MIG-19 Wings

38. In mid-May 1957, construction of four iron wing jigs began in Hall #1, Point (6) of Inclosure 2, which were rumored to be for the future assembly of MIG-19 wings. Figure 3 on page 28 is a sketch of such a frame, which was constructed from "U"-shaped iron beams measuring 30 x 15 x 2 centimeters. 50X1-HUM The beams were soldered together. Twelve workers of the Rudy Letov Plant were engaged in this construction, in which the jigs were cemented to the floor. At the time of last observation, 26 June 1957, these jigs were in 50X1-HUM the form indicated on the sketch.

39. About the same time, one of the workstands for final wing inspection was moved from the corner of Hall #2 to a new position in the middle of the hall. The place vacated was used for the construction of a new jig, Point (40) of Inclosure 2. 50X1-HUM This construction of "U"-shaped beams soldered together was connected with another of identical dimensions but spreading in an opposite direction. It was cemented to

the floor. This jig was brought to the hall by a tractor and rolled into position; five workers assisted during this operation. [redacted] they were Czechs who probably worked in other departments of the plant. They performed most of the work after normal duty hours. This construction was called a "jig for drilling" (svrtavaci pripravek) because holes of the wing lugs were to be drilled there. The beams were of standard measures and were delivered from the United Steel Works, National Enterprise (spojene ocelarny, narodni podnik) in Kladno. 50X1-HUM

40. [redacted] 50X1-HUM

this new construction would be used for MIG-19 wings, which would be assembled in the hall beginning in late 1957. During the political indoctrinations held in the Hall #2 twice a week for ten minutes, it was mentioned that some kind of new production would start in both halls but no details were revealed. In mid-June 12 workers from the 75 employed in Department #455 were picked for training in the new production process but as of 26 June 1957, no training had begun. [redacted] 50X1-HUM a large empty wooden box in the lumber yard; it measured at least eight meters in length. It was rumored that MIG-19 wings arrived in this box, which was under guard during unloading operations.

Enclosure 1: [redacted] Sketch of Rudy Letov Airframe Plant

Enclosure 2: [redacted] Sketch of Floor Plan of MIG-15 Wing Assembly Halls 50X1-HUM

FIGURE # 1; Scale 1:25,000, Čakovice East.

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

Sanitized Copy Approved for Release 2010/10/18 : CIA-RDP80T00246A038200040001-3

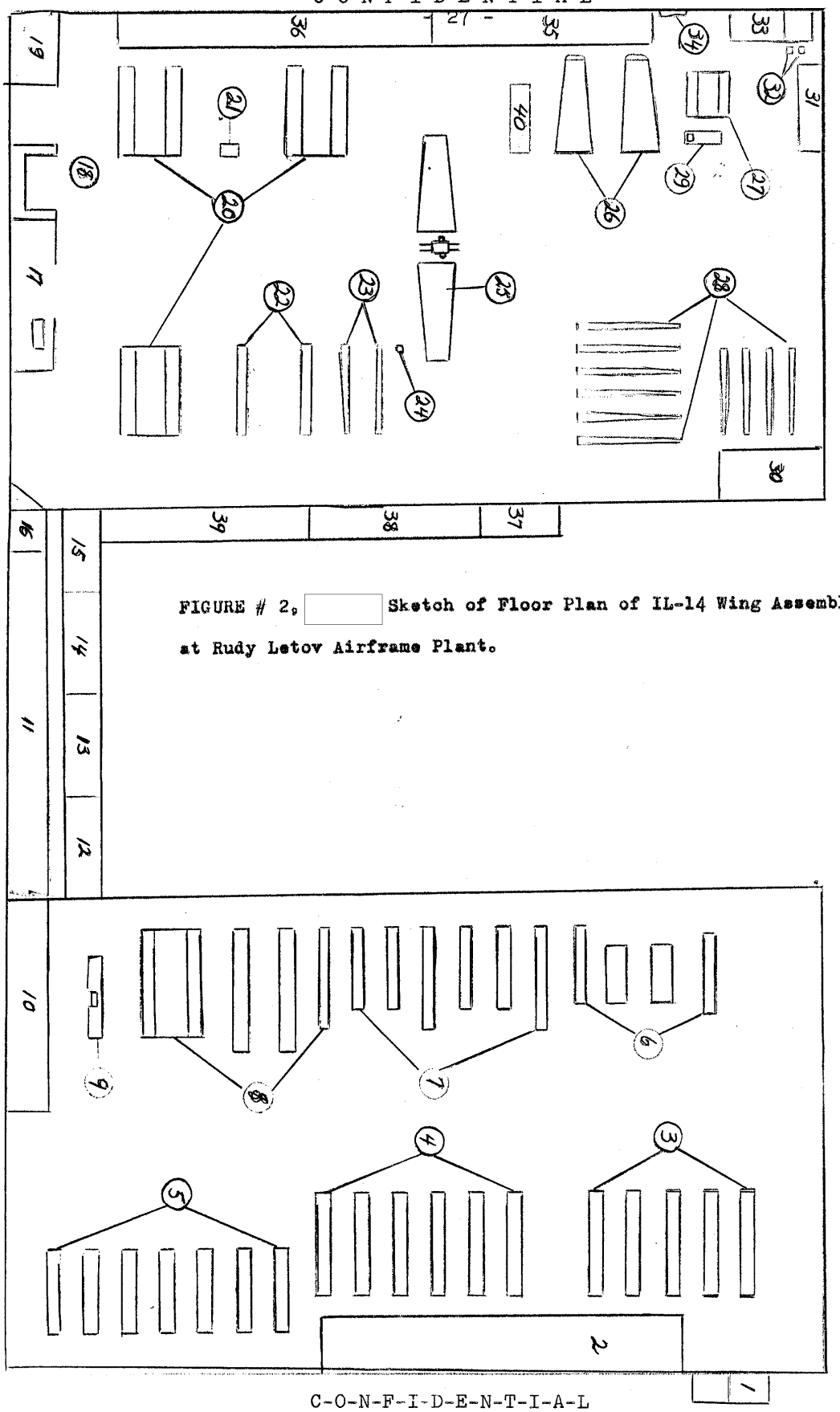
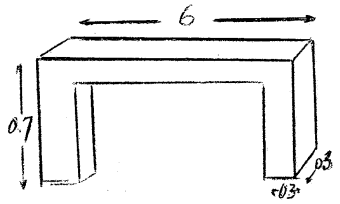


FIGURE # 2. [redacted] Sketch of Floor Plan of IL-14 Wing Assembly at Rudy Letov Airframe Plant.

50X1-HUM

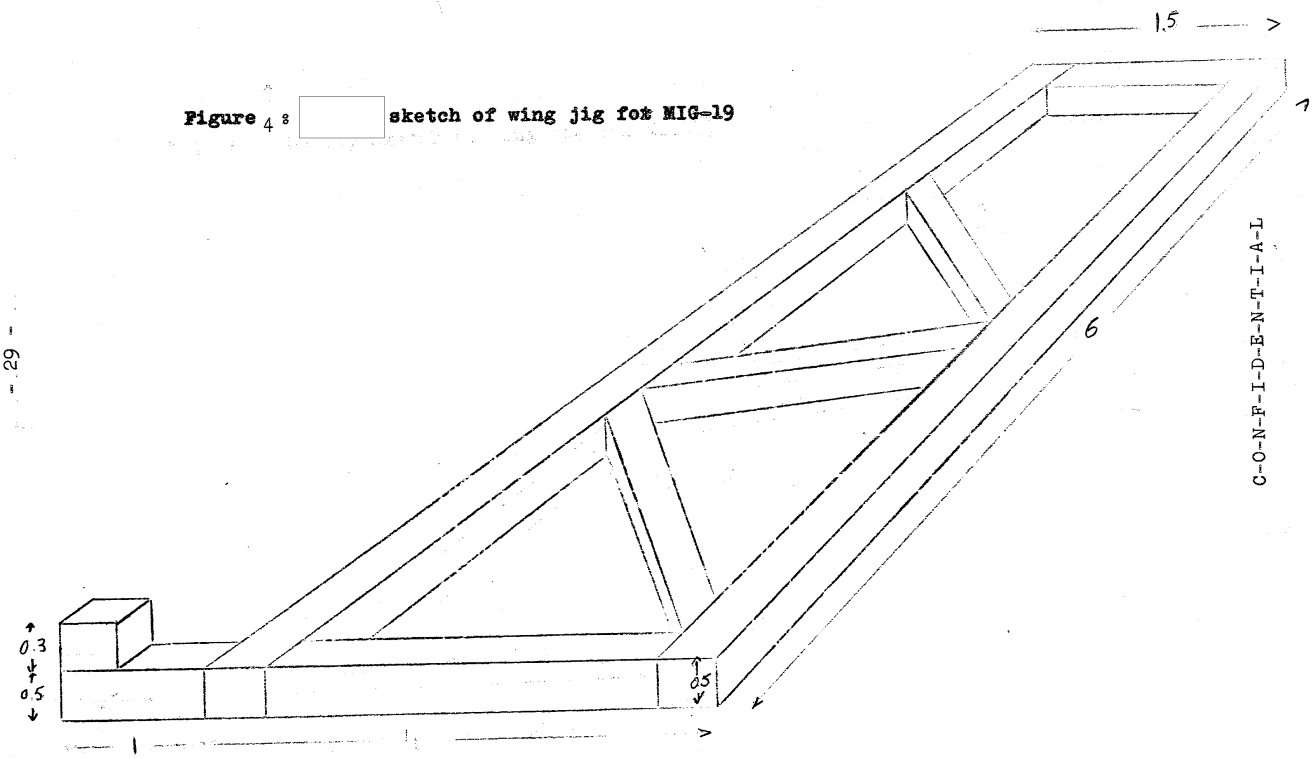
Figure 3 : sketch of wing jig for MIG-19

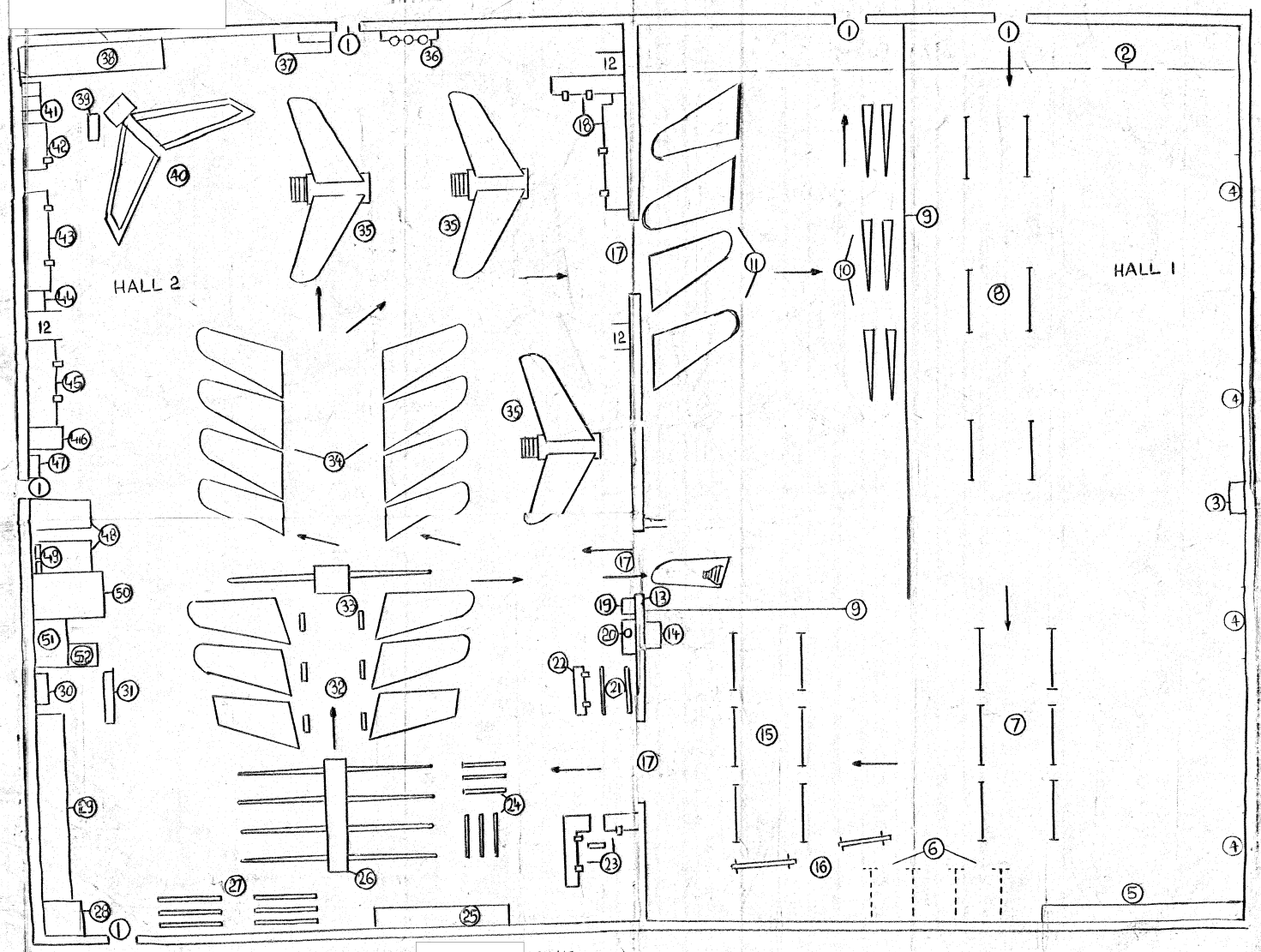
50X1-HUM



C-O-N-F-I-D-E-N-T-I-A-L

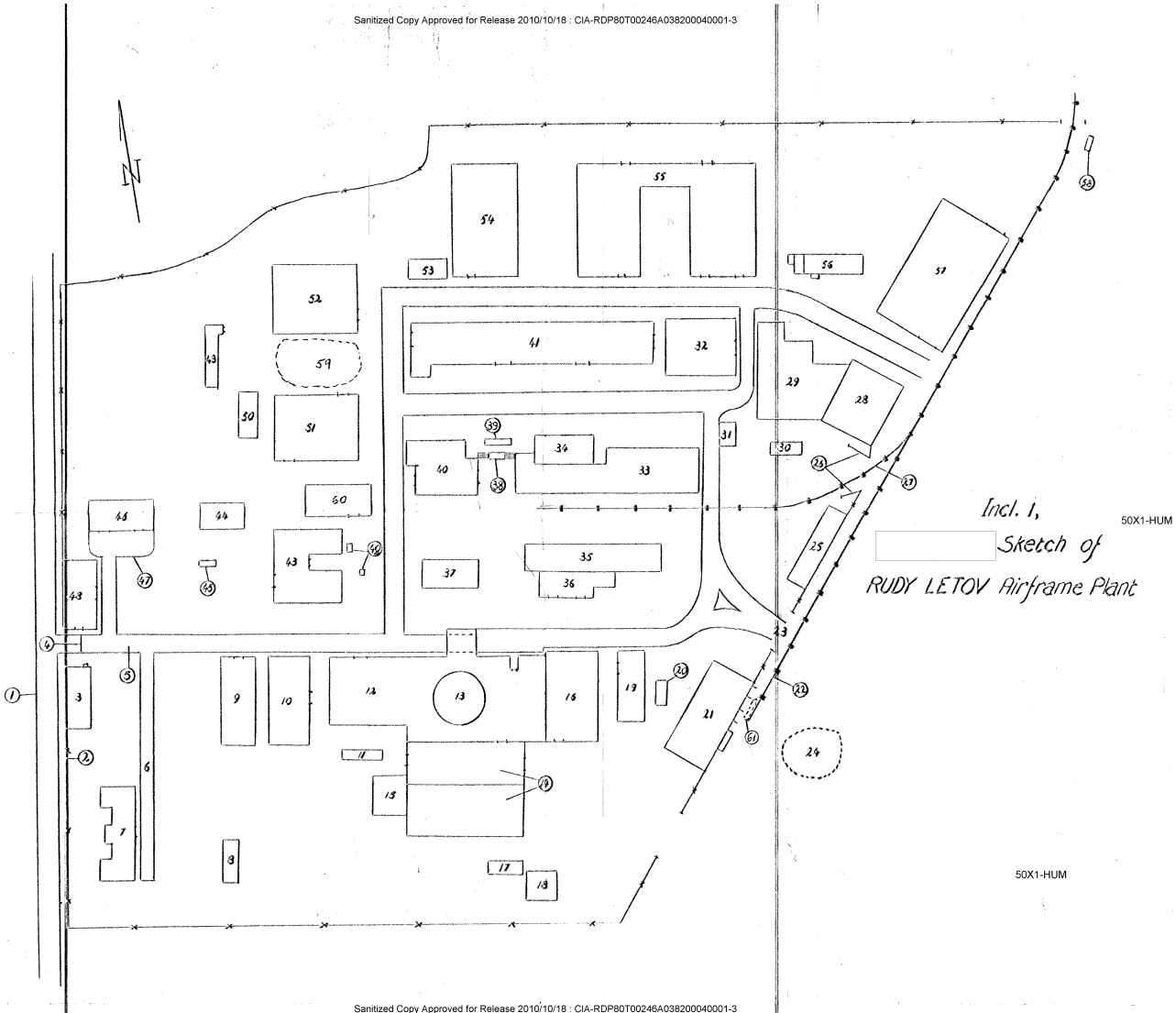
Figure 4 : sketch of wing jig for MIG-19





INCL #2, SKETCH - FLOOR PLAN OF MIG-15 WING ASSEMBLY HALLS AT RUDY LETOV AIRFRAME PLANT.

50X1-HUM



Incl. 1,
[redacted] Sketch of
RUDY LETOV Airframe Plant

50X1-HUM

50X1-HUM